WHAT IS CLAIMED IS:

1. A laser system comprising:

a laser generating a laser beam with a first frequency;

a non-linear optic disposed in an optical path of the beam, the non-linear optic effecting a conversion of the first frequency to a second frequency, the conversion varying with an angle of the non-linear optic relative to the optical path; and

a first member having a first thermal coefficient of expansion, the first member thermally coupled to the non-linear optic so that thermal expansion in a dimension of the first member with a change in temperature of the non-linear optic effects a change in the angle of the non-linear optic.

2. The laser system of claim 1, wherein the thermal expansion of the member effects a predetermined change in the angle of the non-linear optic when the non-linear optic undergoes the change in temperature, and wherein the predetermined change in the angle effects a desired adjustment in the conversion.

3. The laser system of claim 2, wherein the conversion provided by the non-linear optic also varies with a temperature of the non-linear optic, and wherein the angle-induced adjustment in the conversion compensates for temperature-induced changes in the conversion by the non-linear optic.

4. The laser system of claim 3, wherein the non-linear optic is pivoted by the member within the optical path so that the second frequency remains within a desired range when a temperature of the non-linear optic varies throughout a predetermined temperature range during operation of the laser system.

5. The laser system of claim 1, further comprising a second member attached to the first member, the second member having a second coefficient of thermal expansion, the second expansion coefficient being different than the first expansion coefficient, wherein differential thermal expansion alters a bend angle of the attached first and second members, the angle of the non-linear optic being mechanically coupled to the bend angle.

6. The laser system of claim 1, further comprising a beam control system for selectively directing the beam onto a cornea of a patient so as to effect a desired refractive change, the laser system comprising a laser eye surgery system.

7. The laser system of claim 6, wherein the laser comprises a solid-state laser, and wherein a frequency of the beam incident on the cornea is in a range from about 180 to about 210 nm.

8. A laser eye surgery system comprising:

a laser generating a laser beam with a first frequency;

a non-linear optic disposed in an optical path of the beam so as to define an angle relative to the beam, the non-linear optic effecting a conversion of the first frequency to a second frequency, wherein the conversion has an angle-induced change in with a change in the angle, and wherein the conversion has a temperature-induced change with a change in a temperature of the non-linear optic;

a compensator including a first member having a thermal coefficient of expansion, the first member thermally coupled to the non-linear optic so that the change in temperature of the non-linear optic effects a change in a dimension of the first member, the first member mechanically coupled to the non-linear optic, the change in dimension of the first member effecting the change in angle of the non-linear optic so that the angle-induced change in the conversion compensates for the temperature-induced change in the conversion; and

a beam directing system in the optical path from the non-linear optic, the beam directing system selectively directing the beam toward portions of a cornea so as to effect a desired change in a refractive characteristic of the cornea.

9. A method comprising:

generating a laser beam at a first frequency with a laser;

converting the beam to a second frequency with a non-linear optic, wherein the converting step varies with a temperature of the non-linear optic and with an angle defined by the non-linear optic and the laser beam;

passively compensating for temperature-induced variations in the non-linear optic by transferring heat to a member from the non-linear optic so that thermal expansion of the member adjusts the angle of the non-linear optic.